

MOTOR APHASIA DUE TO A SMALL CORTICAL
HÆMORRHAGE IN THE REGION OF
BROCA'S CONVOLUTION; TRE-
PHINING; RECOVERY.¹

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THIS patient furnishes, I believe, a typical example of complete motor aphasia from the pressure of a small blood-clot in the region of the motor speech centre of Broca, at the anterior portion of the left third frontal convolution of the brain. It illustrates, also, in a very striking manner, the results of indirect violence in the production of a cerebral injury.

As the case presents some rather unique and instructive features, it is deemed worthy of record.

D. McG., aged thirty-nine years, single, was admitted to the wards of the J. Hood Wright Hospital on February 8, 1902. On the evening before admission the patient, while standing upon a very narrow step of a flight of cellar-stairs, talking, had lost his balance and fallen backward for a distance of about nine feet, striking presumably upon the back of his head. His physician, Dr. Merrigan, stated that he was picked up unconscious, and had so remained for about eight hours. When he recovered consciousness he appeared dazed, and had great difficulty in talking. It was also stated that he had bled rather freely from the right ear. As his condition did not improve, but became worse, he was sent to the hospital, to which he was able to walk. On admission, the examination showed the patient to be a well-nourished and strongly built man. The examination of the heart, lungs, and abdomen was negative. It was noted that the patient

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looked dazed. No paralysis was noticed at this time, grip in both hands strong. He appeared to feel weak and to be much distressed over his inability to talk. He recognized objects presented to him, and if asked if he knew what the object was, responded with "Yes," "Certainly," but could not name it. He could not speak his own name, but could write his first name, or rather the first part of it, fairly well. He could say "Yes," "Certainly," "Sure," and some other words not noted, and used these frequently and instead of the words he wanted to use. It was also noticed at this first examination, that when a question was put to him he would make great efforts to answer it, as shown by the expression of his face, and after a struggle give it up without articulating a single word.

At the time of admission his temperature was 101° F.; pulse, 90; respirations, 20. Urine, amber, clear, alkaline, 1035. Albumen, faint trace; sugar, none. Microscopic examination negative. Few red cells, urates, mucus. There was a small contusion and abrasion over occiput right side. Patient put to bed and ordered sodium bromide, twenty-five grains, every three hours.

February 9.—Slept at intervals during night, but quite restless this morning. Temperature rose to 102° F. at noon. Condition worse. It was noted that fluids ran out of the side of his mouth while drinking. This is the first time the facial paralysis was observed. Fluid diet, cathartic ordered.

February 10.—Slept fairly well the greater part of night. In the early morning there was some bleeding from the right ear. Temperature at 8 A.M., 101.6° F.; pulse, 68. Aphasia practically complete; attempts to answer but a few questions put to him. During the afternoon he was first seen by the writer. At this time an examination showed the patient to be completely aphasic. When asked to write his name, he held the pencil rather clumsily, but succeeded in writing his first name with considerable difficulty and very slowly. The first letters are fairly legible, but the last three or four are a scrawl, sagging far away below the beginning of name. The grip of the right hand is not noticeably weakened, and there is no paralysis of the lower extremity. The right side of the face is somewhat flattened, the angle of the mouth lower than on left side, and the protruded tongue deviates to the paralyzed side.

During the further examination of the patient, an effort was

made to see whether he could speak any word. He was able to apprehend clearly the questions and to recognize the objects shown him, but absolutely unable to utter one single word. His efforts to speak were so strenuous that clonic convulsions of the right side of the face and neck, accompanied with expiratory grunts, occurred, apparently without loss of consciousness and lasting but a few seconds only. This convulsion was twice observed during the examination, and was reported as occurring once more during the preparations for the anæsthetic. The presence of the motor aphasia with the right facial palsy pointed clearly to pressure over the speech area of the cortex, and immediate operation was advised and done.

Operation.—Ether anæsthesia. A horseshoe-shaped flap of skin, muscle, and periosteum was made, and turned downward in the usual manner, exposing the side of the skull over the motor area of the cortex of the left side of the brain. A half-inch conical trephine was then entered, at a point about one and a half inches behind the external angular process, and the same distance above the level of the zygoma, and a button of bone removed.

The dura mater beneath the opening appeared black, tense, and pulseless. There was no hæmorrhage outside the dura, nor any evidence of fracture of the skull in that region. The trephine hole was enlarged in a forward and downward direction, and the field occupied by the clot clearly exposed. The dura was opened by a curved incision and turned down, exposing the clot beneath. Some dark fluid blood had already been withdrawn by an aspirator-needle before opening the dura, and a little more escaped as soon as it was incised. The hæmorrhage, so far as could be observed, did not come from the vessels of the dura, but from some small cerebral branches. The clot was firm and moderately adherent to the cortex of the brain, and had to be washed away with a stream of salt solution, and some of it was detached carefully with a smooth blunt instrument. Two or three small fragments of brain substance came away with the washings, and there was, perhaps, a slight cortical laceration near the anterior edge of the trephine opening, but its extent was not clearly made out. Some slight oozing of red blood occurred after removal of the clot, but soon ceased.

The flap of dura was carefully replaced but not sutured, and

the rest of the wound was closed in the usual manner, provision for temporary drainage in the event of possible oozing being made by the introduction of small strips of wet rubber tissue into the lower angles of the wound. The patient was returned to the ward and made a good recovery from the ether. About 8 P.M. he had a slight convulsion of the right side of face, similar to the one described; and an hour later had another slight convulsion, which seemed to involve the arm and leg also, but was very slight and only lasted a short time. He was given morphine and slept most of the night.

February 11.—Seems quiet and dazed to-day; rouses when spoken to, but mumbles only in response to questions. Slept the greater part of the day. Towards evening began to say some words when spoken to, as "Yes," "Sure," "Certainly!" Apparently, from signs and expression on questioning, he seems to be suffering considerable pain in his head. Highest temperature 100.8° F. No more convulsions.

February 12.—After a comfortable night, seems much brighter. Wound dressed, drains removed. Very little bloody discharge from wound; no infection. The patient can answer simple questions intelligently; he no longer misuses words, although he speaks slowly and with considerable hesitation. Can pronounce the vowels, but stops at some of the consonants, merely saying, "Yes," or not attempting them at all.

February 13.—Rapidly improving. When asked how he felt to-day, responded, "Fine! I think I am improving regular." He has still considerable pain in the head, and complains especially of a sensation of dizziness at times.

February 15.—Out of bed. Speech improving steadily, though there is still at times considerable hesitation. Gives his name and address correctly.

February 19.—Still hesitates over some consonants, especially the ones near the latter end of the alphabet, while repeating same; seeming to forget, or at least not seemingly able, to pronounce the last part so well, especially the consonants, and occasionally repeating some letter in the first part. Converses about his injury, however, very intelligently.

February 21.—Dressings removed. Wound entirely closed. Cotton and collodion dressing. Patient up and about ward; says the dizziness troubles him less. Pronounces the whole alphabet

fairly well, and, with the exception of a slight hesitation in speech at times, talks naturally.

The later history of the case shows a gradual disappearance of the headache and dizziness and a restoration of confidence on the part of the patient in his ability to talk. Since his discharge from the hospital, the writer has seen the case several times, and in the latter part of March he reported himself as feeling as well as he ever did, and his speech apparently normal.